AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): An NMR analysis method comprising the steps of:

a) subjecting a sample or specimen to a strong static magnetic field to induce precessional motion to the magnetic moments of atomic nuclei within the sample or specimen;

b) applying RF power perpendicularly to the direction of the static magnetic field with an irradiation coil during periods spaced and at an RF frequency to induce precessional motion of the magnetic moments in an excited state;

c) detecting an NMR signal released with a detecting coil when precessional motion of the magnetic moments return to a ground state;

d) cooling with low temperature fluids the coils used to apply RF power or detect NMR signals in steps b) and c);

the improvement comprising:

e) during periods complementary to the applying the RF power in step b), applying RF power of a frequency not affecting measurement of the NMR signal ~~to minimize variation in the temperature of the coils detecting the NMR signal~~, wherein the total amount of RF power applied to the detection coil or the RF irradiation coil is controlled to be almost constant irrespective of whether the RF power of the frequency necessary for the measurement of the NMR signal is applied or not.

Claim 2 (Previously Presented): The NMR measurement method set forth in claim 1, wherein said detection coil or the RF irradiation coil has a resonance mode at a different frequency from a resonance mode at a measurement frequency for the NMR signal and which does not affect the measurement of the NMR signal.

Claim 3. (Previously Presented): The NMR measurement method set forth in claim 1, wherein said frequency not affecting the measurement of the NMR signal is shifted

from the measurement frequency of the NMR signal by a given frequency and can also resonate in the same resonance mode as the measurement frequency for the NMR signal.

Claim 4 (Cancelled).

Claim 5 (Withdrawn): An NMR measurement method comprising the steps of:

applying RF power of a frequency not affecting measurement of an NMR signal to a detection coil or the RF irradiation coil such that reflected RF power is produced; and

detecting an increase in the temperature of the detection coil or the RF irradiation coil from the strength of the reflected RF power.

Claim 6 (Withdrawn): The NMR measurement method set forth in claim 5, wherein said detection coil or the RF irradiation coil has a resonance mode which is different from a resonance mode at a measurement frequency for the NMR signal and which does not affect the measurement of the NMR signal.

Claim 7 (Withdrawn): The NMR measurement method set forth in claim 5, wherein said frequency not affecting the measurement of the NMR signal is shifted from a measurement frequency for the NMR signal by a given frequency and can resonate in the same resonance mode as the measurement frequency for the NMR signal.

Claim 8 (Withdrawn): The NMR measurement method of any one of claims 5 to 7, wherein the RF power of the frequency not affecting the measurement of the NMR signal can be so adjusted that the ratio of the RF power reflected from the detection coil or the RF irradiation coil to the RF power applied to the detection coil or the RF irradiation coil is minimized.

Claim 9 (Currently Amended): In an NMR apparatus comprising:

means for subjecting a sample or specimen to a strong static magnetic field to induce precessional motion to the magnetic moments of atomic nuclei within the sample or specimen;

~~a~~ an RF irradiation coil for applying RF power perpendicularly to the direction of the static magnetic field and at a frequency to induce precessional motion of the magnetic moments of the in an excited state;

first RF power application means for during [[a]] periods of time applying RF power of a frequency necessary for measurement of an NMR signal to the irradiation coil; and

second RF power application means for, during periods complementary to the period the first power application means is active, applying RF power of a frequency not affecting the measurement of the NMR signal to the RF irradiation coil, wherein the total amount of RF power applied to the detection coil or the RF irradiation coil is controlled to be almost constant irrespective of whether the RF power of the frequency necessary for the measurement of the NMR signal is applied or not.

Claim 10 (Previously Presented): The NMR apparatus set forth in claim 9, wherein said RF irradiation coil has a resonance mode at a different frequency from a resonance mode at a measurement frequency for the NMR signal and which does not affect the measurement of the NMR signal.

Claim 11 (Previously Presented): The NMR apparatus set forth in claim 9, wherein said frequency not affecting the measurement of the NMR signal is shifted from the measurement frequency of the NMR signal by a given frequency and can also resonate in the same resonance mode as the measurement frequency for the NMR signal.

Claim 12 (Withdrawn): The NMR apparatus set forth in any one of claims 9 to 11, wherein there is further provided control means for controlling said first and second RF power application means such that the sum of the RF power applied to the detection coil or the RF irradiation coil from said first RF power application means and the RF power applied to the detection coil or the RF irradiation coil from said second RF power application means is kept almost constant.

Claim 13 (Withdrawn): The NMR apparatus set forth in any one of claims 9 to 11, wherein there is provided a power meter for detecting the ratio of the RF power reflected from the detection coil or the RF irradiation coil to the RF power applied to the detection coil or the RF irradiation coil from the second RF power application means.

Claim 14 (Withdrawn): The NMR apparatus set forth in claim 13, wherein the RF power applied from the second RF power application means can be adjusted based on the value of the power meter such that the reflected RF power is minimized.

Claim 15 (Previously Presented): The NMR measuring method according to claim 1, wherein the same coil is used to apply RF power and to detect the NMR signal.

Claim 16 (Previously Presented): The NMR measuring method according to claim 1, wherein different coils are used to apply RF power and to detect the NMR signal.